

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference LIFA 2 PCT	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/FI 2003/000272	International filing date (day/month/year) 10.04.2003	Priority date (day/month/year) 11.04.2002
International Patent Classification (IPC) or national classification and IPC B03C 3/155		
Applicant OY LIFA IAQ LTD et al		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
 - a. ☐ (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:

☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:
- | | | |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability, citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

Date of submission of the demand 07.11.2003	Date of completion of this report 23.06.2004
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Form PCT/IPEA/409 (cover sheet) (January 2004)

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FI 2003/000272

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

- ☐ international search (under Rules 12.3 and 23.1(b))
☐ publication of the international application (under Rule 12.4)
☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☒ the international application as originally filed/furnished

☐ the description:

pages _____ as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☐ the claims:

pages _____ as originally filed/furnished

pages* _____ as amended (together with any statement) under Article 19

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☐ the drawings:

pages _____ as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (*specify*): _____

☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (*specify*): _____

☐ any table(s) related to the sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FI 2003/000272

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-8</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>1-8</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1-8</u>	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Documents cited in the International Search Report:

D1: US 5549735 A
D2: WO 982222 A1

The cited document D1 has been reconsidered to only represent the general state of the art.

From D1, which is considered to represent the closest prior art, a combined gas and electrostatic filter construction is known (see e.g. column 8, line 66 - column 9, line 61). The construction in D1 comprises first and second electrodes (15, 16, 23, 22, 72 and 74) where some of them (15, 23, 72) are electrically insulated. An insulating material (17, 21, 73) acting as a particle filter is located between the first and the second electrodes and there is a difference in electrical potential between the electrodes in order to create a field between the electrodes. Further, according to the construction in D1 the material of at least one of the electrodes (e.g. 16, 74) is activated carbon, which is permeable to air, filters gases and has a low electrical conductivity. The gas filtering electrode is shaped to form a bag (see e.g. figure 1 or 5).

.../...

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: Box V

The difference between the invention according to claim 1 and D1 is that both electrodes, according to the invention, are set substantially parallel to the direction of the airflow. In D1 the electrodes (e.g. 72 and 74) are parallel, but not substantially parallel to the airflow. In D1 it is rather so that the electrodes are perpendicular to the airflow, in accordance with basic rules of flow dynamics. This also means that the electric field, between the electrodes in D1, are parallel to the airflow, while in the invention according to claim 1 the electric field is substantially perpendicular to the airflow. The stated difference implies improvements with respect to the prior art, and the stated difference is not mentioned or hinted at in D1. Further, the stated difference is not considered to be obvious for a person skilled in the art.

Therefore, the invention according to claim 1 is novel and is considered to involve an inventive step.

Thus, also the following claims 2-8 are novel and inventive.

D2 only represents the general state of the art.

The invention is industrially applicable.